



Initial Analysis For An 8-Hour Ozone Boundary Option For the Maricopa County Nonattainment Area

**MAG Regional Council
June 25, 2003**





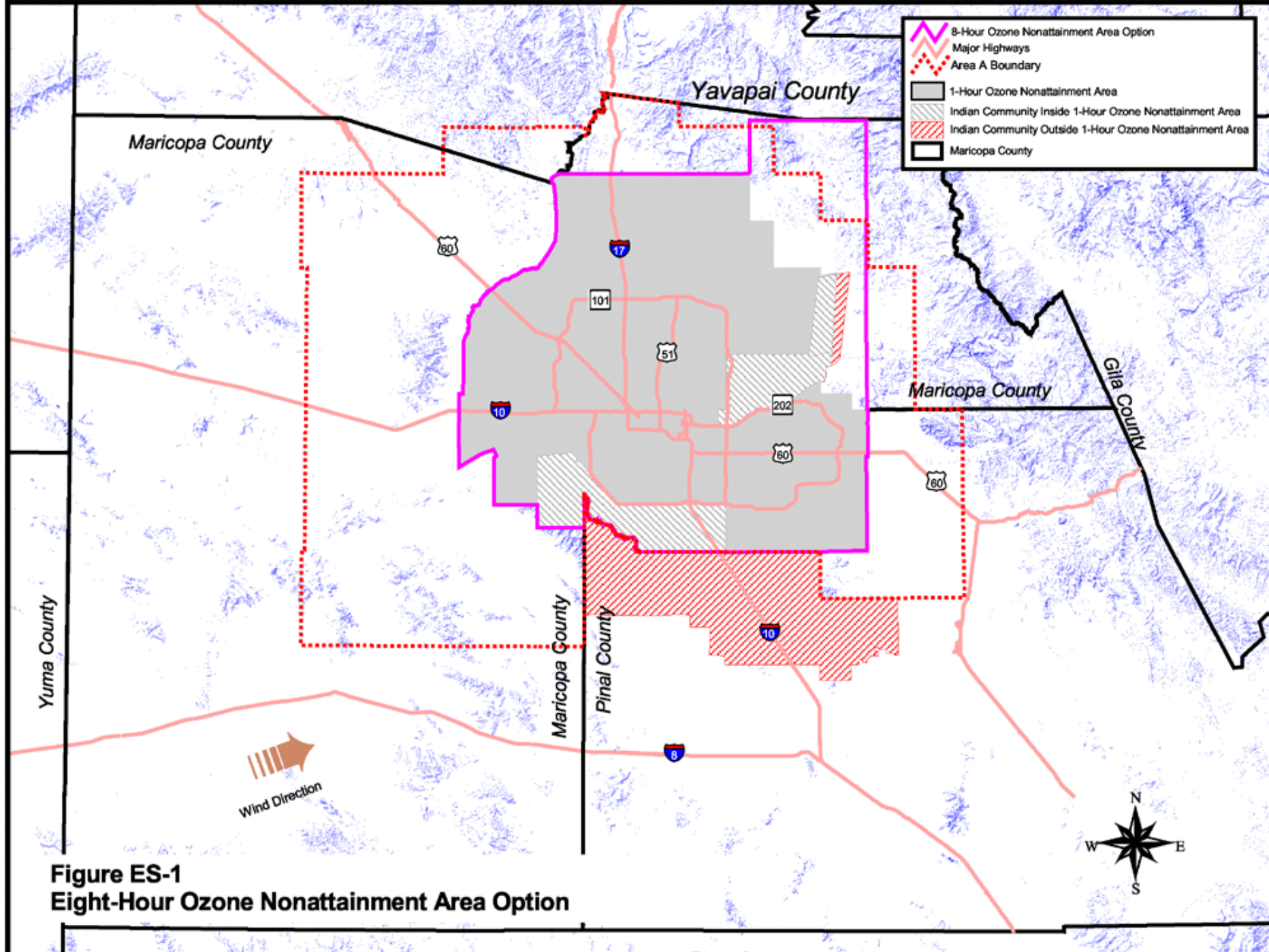
8-Hour Ozone Boundary

- **States must recommend nonattainment area boundaries - July 15, 2003**
 - **EPA finalizes boundaries - April 15, 2004**
 - **Boundary must include all areas that do not meet or contribute to a nearby area that does not meet the standards**
 - Protect public health
 - More stringent requirements for business, industry, and transportation
 - Transportation conformity requirements apply
 - Difficult to make the boundary smaller once it is set
 - Boundary can be made larger at any time
- Clean Air Act, Section 107(d)(3)(D)



8-Hour Ozone Boundary

- **EPA boundary presumption is the MSA (Maricopa and Pinal Counties)**
- **States may propose a smaller boundary by addressing 11 key factors**
- **MAG conducted an initial analysis using EPA factors**
 - Data analyzed through 2020
 - Compared the MSA with the Urban Planning Area and 8-hour ozone boundary option





Timeline

- **May 1, 2003 - MAG discussed initial analysis with the Air Quality Planning Team (ADEQ, ADOT, Maricopa County, MAG)**
- **May 8 and 27, 2003 - MAG Air Quality Technical Advisory Committee reviewed information**
- **June 16, 2003 - Regional Council Executive Committee**
- **June 17, 2003 (10:00) - ADEQ discussed ADEQ boundary options with the Air Quality Planning Team**
- **June 17, 2003 (1:30) - ADEQ presented ADEQ boundary options at a stakeholder meeting**



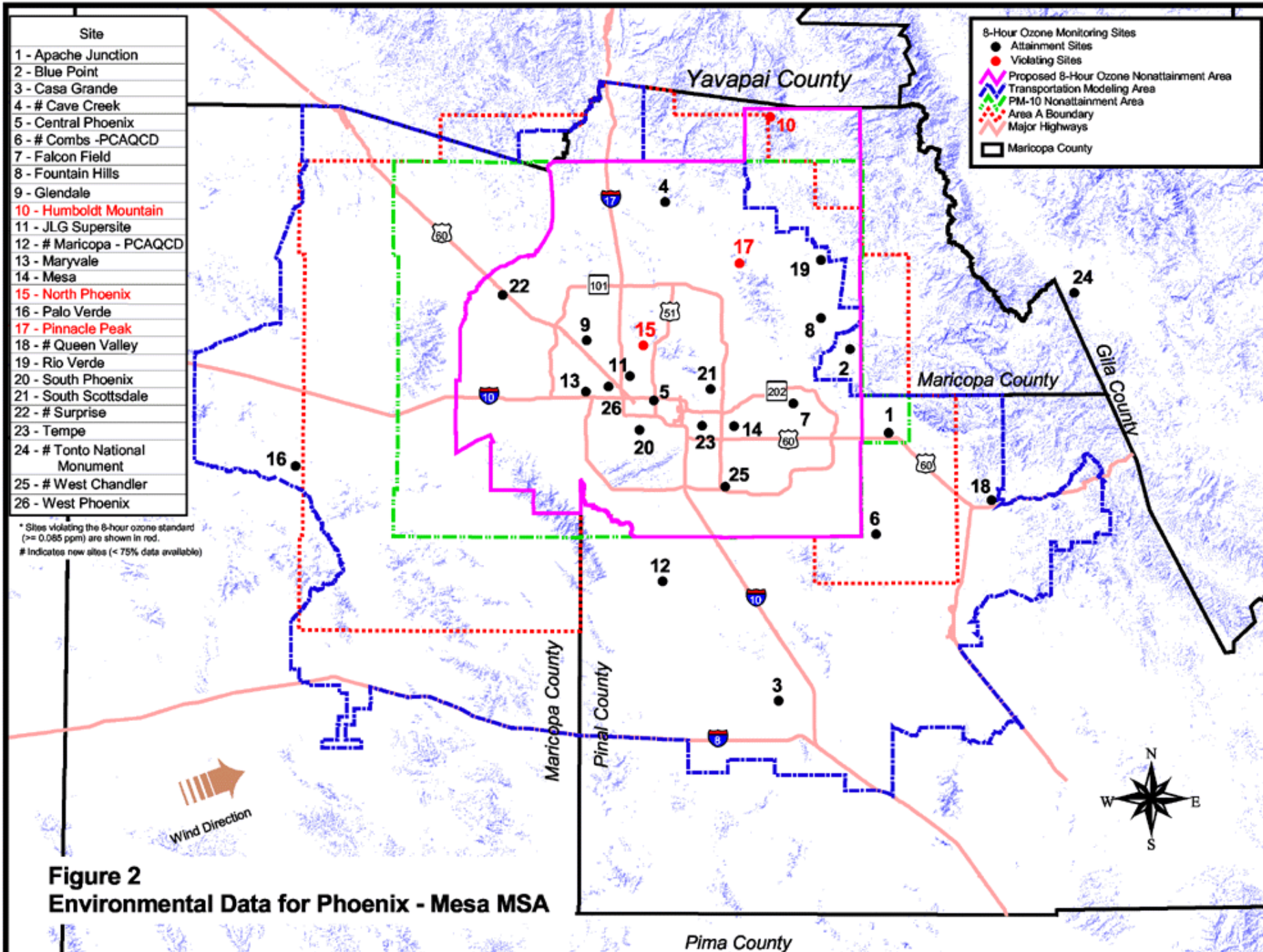
Timeline

- **June 19, 2003 - MAG Air Quality TAC recommendation**
- **June 20, 2003 - Transmitted ADEQ options and Air Quality TAC recommendation to the Regional Council**
- **June 23, 2003 - ADEQ deadline for comments on boundary options**
 - **MAG staff submits technical comments and Air Quality TAC recommendation to ADEQ**
- **June 25, 2003 - Regional Council Action**
- **July 15, 2003 - Governor's recommendation to EPA**
- **April 15, 2004 - EPA finalizes the boundaries**



EPA Factors

- **Emissions and air quality in adjacent areas**
- **Population density and degree of urbanization**
- **Monitoring data in local areas and larger areas**
- **Location of emission sources**
- **Traffic and commuting patterns**
- **Expected growth**
- **Meteorology**
- **Geography/topography**
- **Jurisdictional boundaries**
- **Level of control of emission sources**
- **Regional emission reductions**





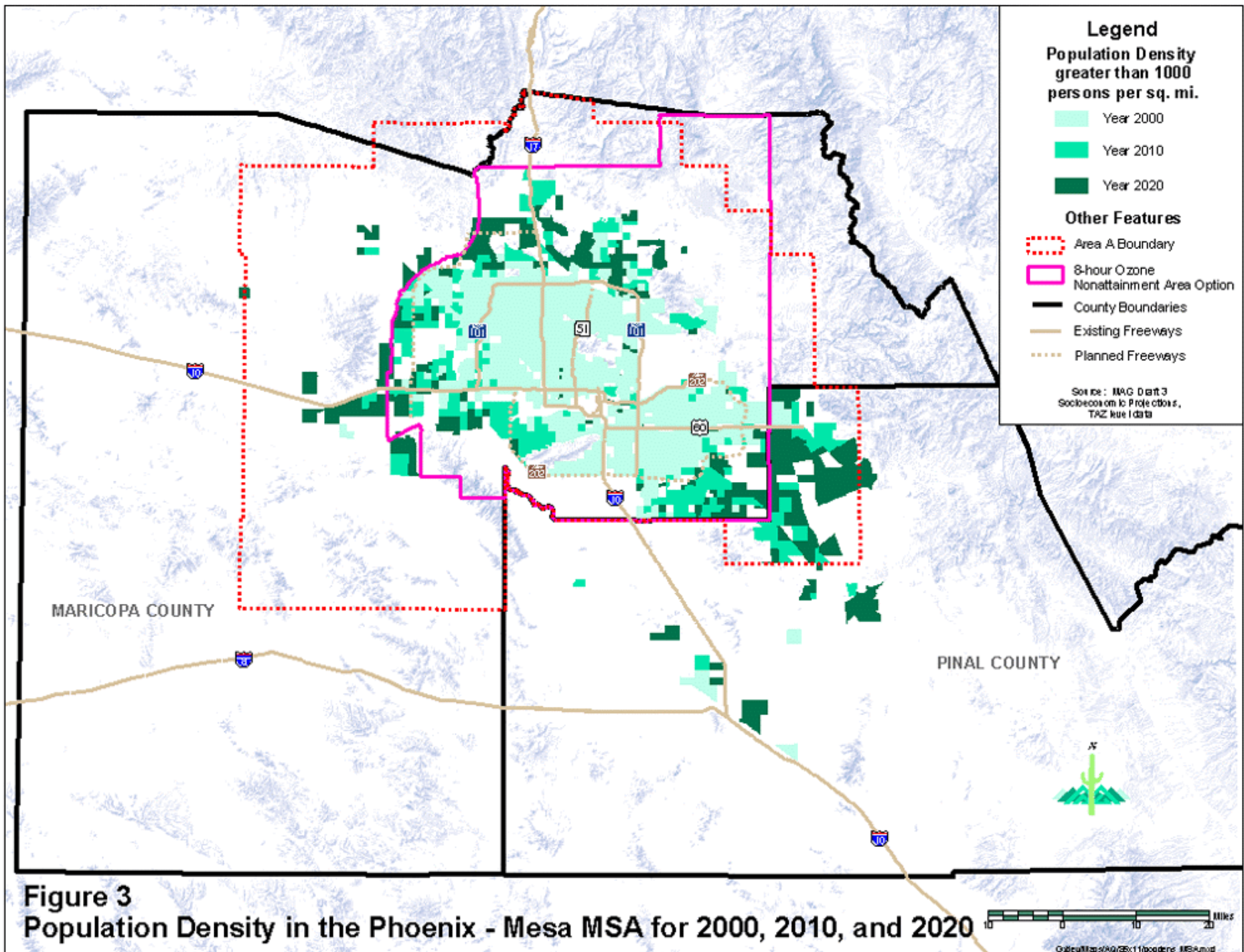
Rationale for the 8-Hour Ozone Boundary Option

- **In 2000-2002, violations occurred in the centralized urban area of the MSA and in northeastern Maricopa County**
 - In the N.E., violations are due to transport from the urban area and biogenics in rural locations
 - 3 monitors with violations: Humboldt Mountain, North Phoenix, and Pinnacle Peak
- **In May 2003, 13 exceedances occurred at 8 monitors**
 - All 8 are located inside the boundary option



Population Estimates

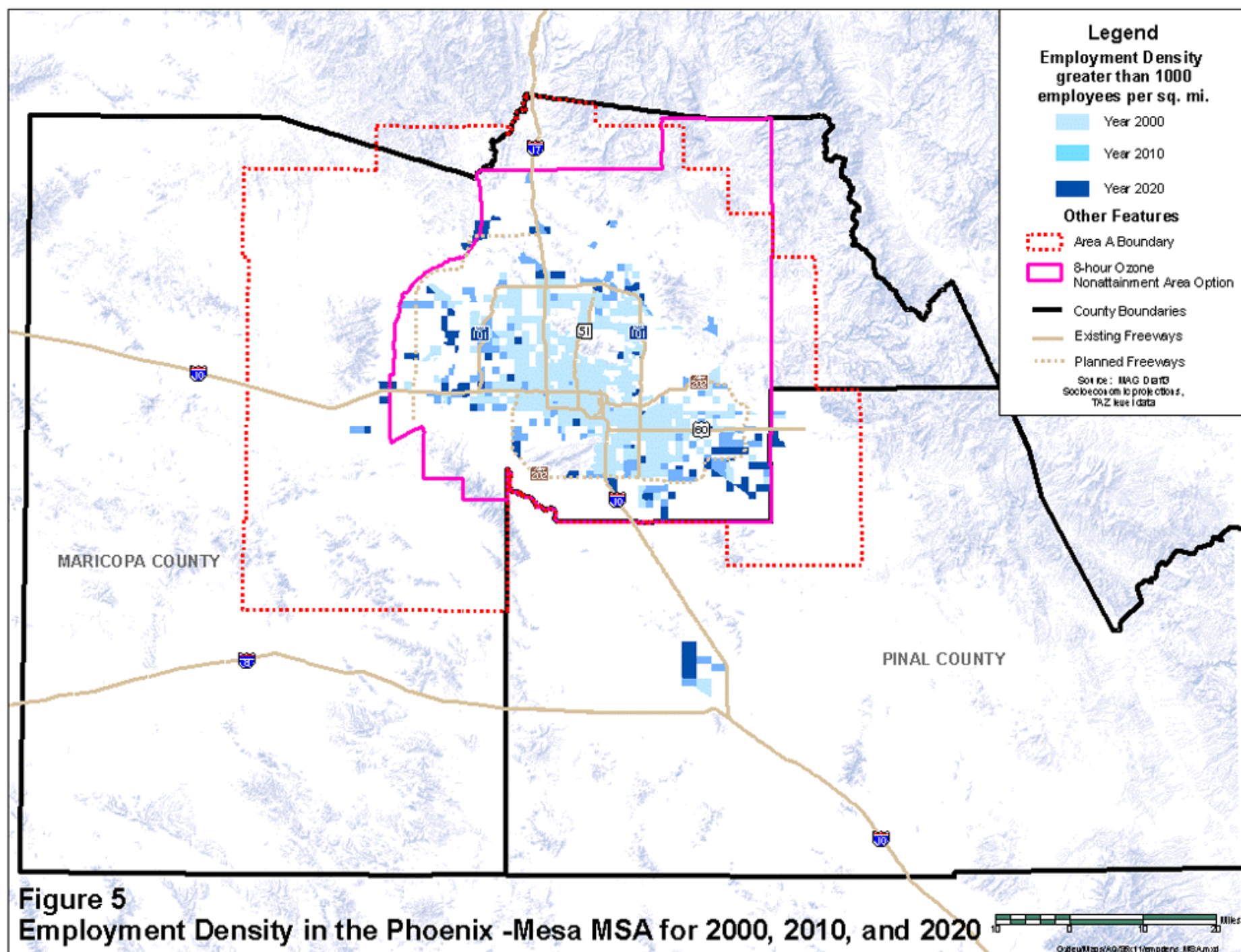
	<u>MSA</u>	<u>Boundary Option</u>	<u>%</u>
2000	3,278,100	3,050,000	93.0%
2010	4,581,000	4,024,000	87.8%
2020	6,077,000	4,870,000	80.1%





Employment Estimates

	<u>MSA</u>	<u>Boundary Option</u>	<u>%</u>
2000	1,614,000	1,539,000	95.4%
2010	2,222,000	2,056,000	92.5%
2020	2,891,000	2,579,000	89.2%





Rationale for the 8-Hour Ozone Boundary Option

- **Most of the growth in population and employment in the MSA occurs - and will continue to occur - inside the boundary option**
- **In 2020, the boundary option will contain:**
 - 80% of the population in the MSA
 - 65% of the population growth in the MSA occurring after 2000
 - 89% of the employment in the MSA
 - 81% of the employment growth in the MSA occurring after 2000



Rationale for the 8-Hour Ozone Boundary Option

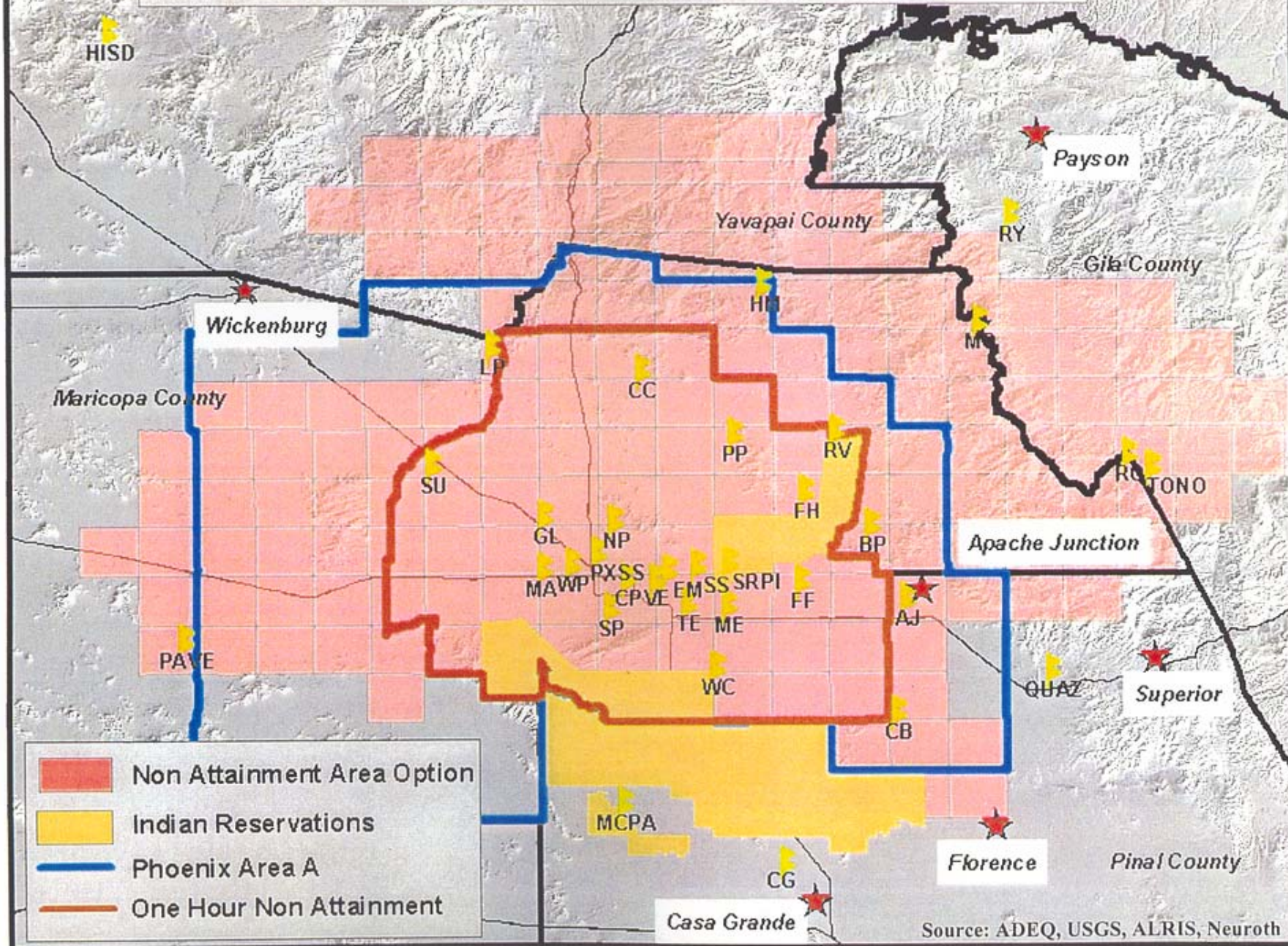
- **Measures are in place to control emissions outside of the boundary**
 - Area A measures mandated by the Arizona Legislature are in effect
 - New mobile source controls will significantly reduce mobile source emissions in the entire MSA
 - EPA adopted Tier 2 light duty vehicle controls; heavy duty vehicle standards and low sulfur fuels
 - EPA proposed nonroad standards and low sulfur fuels



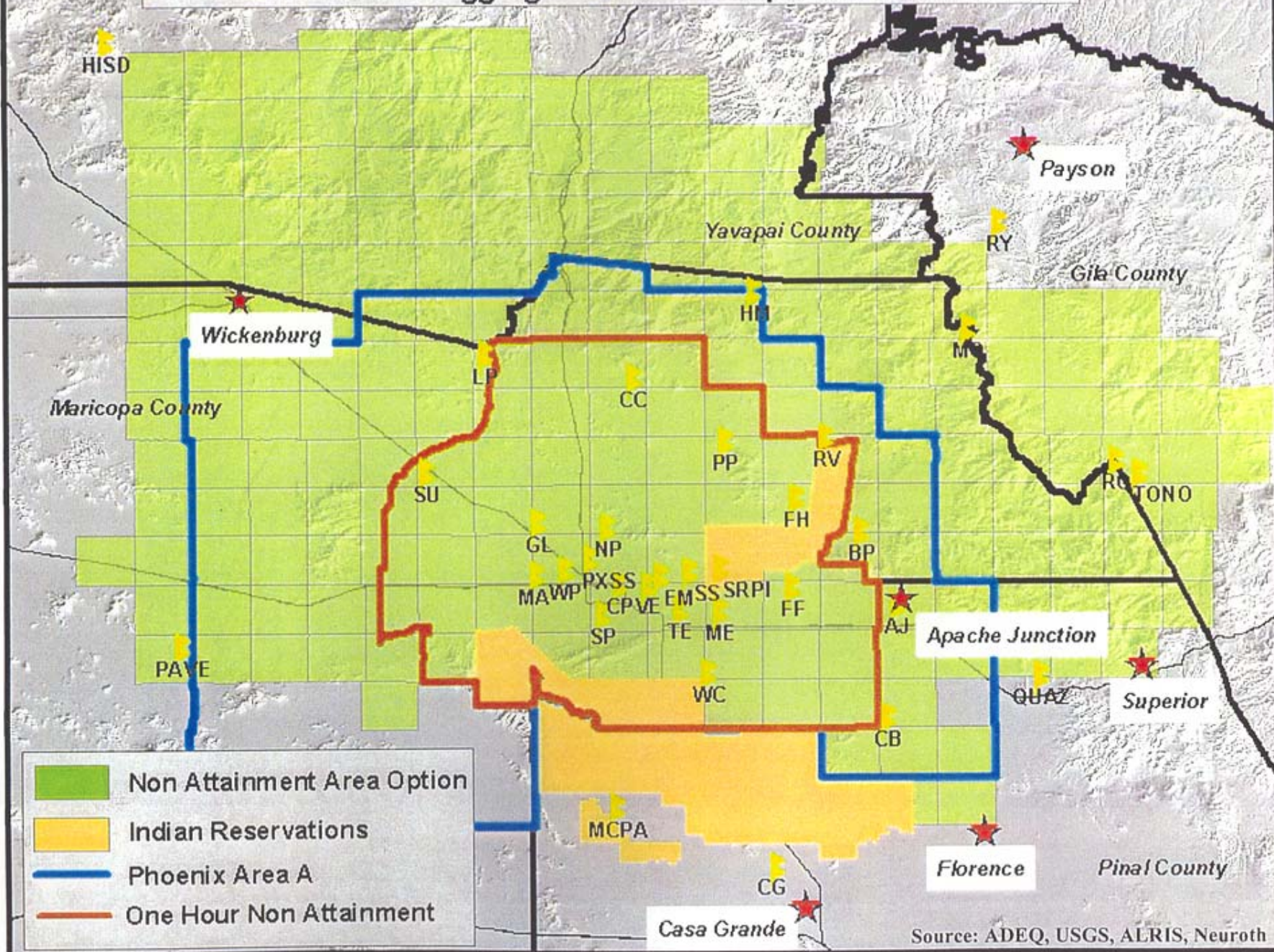
Rationale for the 8-Hour Ozone Boundary Option

- **Emission controls imposed within the boundary option and Area A will improve air quality in downwind areas of the MSA**
 - Current control measures have already been successful in eliminating violations of the 1-hour ozone standard
- **Expansion of the boundary further would have minimal marginal effect in reducing emissions in the MSA**

8-Hour Ozone Non Attainment Area Option - 85 ppb Design Criteria Aggregated to Township



8-Hour Ozone Non Attainment Area Option - 80 ppb Design Criteria Aggregated to Township



Source: ADEQ, USGS, ALRIS, Neuroth



Issues With ADEQ Boundary Options

- **ADEQ boundary options are about 6,300 and 8,100 sq. mi. in area, while the draft MAG option is 2,300 sq. mi.**
- **ADEQ boundaries are excessively large given the extent of the problem, controls which are already in effect, and new federal controls soon to be in effect**
 - Only 3 monitors violate - all with marginal values of .085 ppm
 - Area A measures are in effect now
 - Federally mandated vehicle emission controls and low sulfur fuels will significantly reduce mobile source emissions in the near future
- **Lack of supporting documentation**



Issues With ADEQ Boundary Options

- **Excessive boundary expansions beyond the draft MAG option would have minimal marginal effect in reducing emissions**
- **Increased risks for transportation conformity**
 - New conformity tests and requirements for the 8- hour ozone standard will be forthcoming and are **UNKNOWN** (EPA Proposed Rule to Implement the 8-Hour Ozone Standard, June 2, 2003)
 - Conformity would be complicated further by including portions of 4 counties in 1 nonattainment area
 - If conformity cannot be determined, major transportation projects may not be approved and built regardless of funding sources.



For more information

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